

ORDINANCE NO. 2151

(Landscaping)

An ordinance creating the Broken Arrow Zoning Code, Article VIII, Section 19, establishing landscape requirements as a part of the zoning process, repealing all ordinances to the contrary and declaring an emergency.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF BROKEN ARROW:

SECTION I. There is hereby created Article VIII, Section 19 of the Broken Arrow Zoning Code which shall read as follows:

LANDSCAPE REQUIREMENTS

19.1 - Preface

Landscaping, including trees, shrubs, flowers, vegetation, and landscape elements are recognized as effective means of beautifying and enhancing the livability of the City of Broken Arrow, by making more effective and aesthetic use of open space and other uses of land. In addition, trees provide cooling of paved areas and habitat for urban wildlife.

19.2 - Purpose and Intent

The objective of this Ordinance is to establish procedures and practices governing the protection, installation, and long-term maintenance of trees, vegetation, and other landscape elements within the City of Broken Arrow. The City's purpose is as follows:

- a. To promote the beautification of the City of Broken Arrow.
- b. To create for present and future generations a planned pattern for the urban forest within the City of Broken Arrow.
- c. To promote reasonable preservation and replenishment of landscaping in new developments and on existing commercial and public properties and to provide guidelines for protection of trees during construction, development, or redevelopment.
- d. To safeguard and enhance property values and to protect public and private investment.
- e. To provide an ordinance that is reasonable, enforceable, and easily understood by all effected parties.
- f. To provide standards for the installation and placement of landscaping to ensure the safety of the general public.

- g. To promote the healthy maturing and longevity of landscaping by providing a standard guide for plant selection, installation, and placement.
- h. To promote an awareness of the benefits of effective landscaping among the various City of Broken Arrow departments, the public utility providers, the development community, individual businesses, and property owners.

19.3 - Definitions Relating to this Ordinance

ARTERIAL STREET:

A street designated as either a "primary arterial" or a "secondary arterial" on the Transportation Plan Map in the City of Broken Arrow Comprehensive Plan.

BERM:

A mound or bank of earth covered with either grass or other plant material.

CALIPER:

The diameter of the tree trunk measured at 6" above ground level for a tree trunk having a diameter of 4" or less and the diameter of the tree trunk measured at 12" above ground level for a tree trunk having a diameter exceeding 4".

DAMAGE:

Includes any intentional or negligent act which will cause perennial vegetation to decline and die within a period of three years, including but not limited to, such damage inflicted upon the root system by the compaction of the soil within the drip line of a tree during the operation of heavy machinery; the change of the natural grade above the root system, around the drip line, or around the trunk of a tree; and damage from injury or from fire to vegetation which results in or permits infection or pest infestation. Damage also includes application to soil, within drip line of any tree or shrub, of petroleum products used in machinery or misuse of pesticides, particularly herbicides.

DRIP LINE:

The periphery of the area underneath a tree which would be encompassed by perpendicular lines extending from the exterior edges of the crown of the tree. The area under or around the tree containing the fragile feeder roots of the tree.

GROUND COVER:

Low plants which grow to form a continuous cover over the ground, such as vinca, English ivy, grass, or like material.

HARDSCAPE:

Non-deleterious materials used to augment the beauty of a landscaped area. "Hardscape" may include brick, stone or rock walls, fountains, ponds, pools, planter or retaining walls, but it excludes artificial plants, trees, or other artificial vegetation.

IRRIGATION SYSTEM:

Shall include one or more of the following: (1) "Underground Sprinkler System" normally consists of a sub-terrainial piping system consisting of pipe, valves, wires, controller system, approved back-flow preventor, discharge points, installed for the purpose of transporting and providing water to large, non-specific areas of the landscape area: (2)"Drip System" normally consists of an above ground piping system consisting of pipes, valves, wires, controller system,

approved back-flow preventor, emitters, installed for the purpose of providing water to specific plant locations: (3)"Hose Attachment" normally consists of a sub-terrainial piping system with a manual or mechanical valve located within 100 feet of all landscaped areas allowing attachment of a garden hose for the purpose of providing water to specific as well as non-specific landscaped areas.

LANDSCAPE AREA:

The unpaved area which contains grass, shrubs, flowers, ground cover, trees or native plant materials of any kind and which may include decorative fixtures or accouterments such as rock, pools, and planters. Does not include artificial plants, trees, or vegetation.

LANDSCAPED EDGE:

Landscape area required to be provided adjacent to a street or highway in multifamily, and non-residential areas.

LANDSCAPE RESERVE:

Landscape area provided adjacent to an arterial street for single family, two-family, and mobile home development.

LANDSCAPE ISLAND:

Unpaved area located within or protruding into a parking lot or the center of an entry into a development's drive or street. The area of a landscaped island is measured from back of inside curb to the back of inside curb.

LANDSCAPING:

Any living organic plant material including trees, shrubs, flowers, ground cover, vegetation, vines or grass.

MAINTAIN, MAINTENANCE:

In reference to landscaping includes irrigating, pruning, mulching, mowing, spraying, fertilizing, propping, bracing, treating for disease or injury, and any other similar acts which promote the life, growth, health or beauty of the landscape vegetation.

THREE (3) GALLON SHRUB:

"Gallon" indicates the standard unit of measure determining the size of a nursery grown plant material as defined by the American Standard for Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington D.C. 20005 or any other approved nursery organization recognized by the City of Broken Arrow. Shrub means a bushy, woody plant, usually with several permanent stems and usually not over ten feet high at its maturity.

TREE:

Any self supporting woody plant having one or more defined stems or trunks in a diameter of two (2) inches or more and having a defined crown which customarily attains a mature height of 8 feet or greater.

19.4--General Landscaping Requirements

These standards shall apply to all areas where landscaping is required by this ordinance.

a. Required landscaping shall not include artificial plants, trees, or other artificial vegetation.

- b. Required new landscaping shall be irrigated by one of the following methods:
 - 1. An underground sprinkling system
 - 2. A drip system
 - 3. A hose attachment, with such attachment within 100 feet of all landscaped areas
- c. Irrigation system shall be installed to City of Broken Arrow codes.
- d. Landscaping, including berms, shall not obstruct pedestrian and/or vehicular traffic visibility at street intersections or at access points to streets.
- e. All plant material shall be maintained in a healthy and growing condition, and must be replaced in accordance with Section 19.7.e if damaged, destroyed, or removed.
- f. Landscaped areas shall be kept free of trash, litter, and weeds.
- g. Anyone desiring to install and maintain landscaping materials, landscape or decorative lighting, or irrigation facilities within the City right-of-way must obtain a landscaping permit from the City of Broken Arrow Inspections Department.

19.5 - Non-residential Landscaping Requirements

These standards shall apply to all non-residential districts except C-1, O-1, and C-1P.

- a. Landscaping Along Street Right-of-Way All commercial, industrial, and other non-residential uses, except in the C-1, O-1, and C-1P district, shall comply with the following streetscape requirements:
 - 1. A landscaped edge shall be provided adjacent to all highways, frontage roads, arterial and collector streets, and entrances through non-residential districts to residential subdivisions. The landscaped edge shall be a minimum width of ten feet, exclusive of street right-of-way. Within the landscaped edge, one tree from Section 19.14 (2" caliper minimum) shall be planted per 50 lineal feet of landscaped edge. The number of required trees shall be calculated solely on the linear frontage of the required landscaped edge and shall be rounded to the nearest whole number. Trees may be grouped together or evenly spaced.
 - 2. Where parking lots and drives abut the landscaped edge, ten shrubs (3 gallon minimum) shall be planted per 50 lineal feet of abutment to the landscaped edge. These shrubs are in addition to the required number of trees. The number of required shrubs shall be calculated solely on the linear frontage of parking lot/drive abutment to the required landscaped edge and shall be rounded to the nearest whole number. A berm or masonry wall may be placed within the landscaped edge in lieu of the required shrubs. The berm or masonry wall must be at least 30 inches above the top of the parking lot adjacent closest to the street.
 - 3. The Planning Commission may reduce the width of the required landscaped edge during site plan review when the reduction is required for public improvements.
 - 4. No site plan approved by the Planning Commission prior to the effective date of this section

shall be required to conform to the landscaping requirements of this section unless the site plan is being resubmitted to the Planning Commission and there is a thirty percent (30%) or more increase in the square footage of building area or parking lot.

- b. Interior Parking Lot Landscaping Landscaped areas shall be established and maintained in offstreet parking areas as follows:
 - 1. For site plans of 2.5 acres or less in size, no parking space shall be located more than 50 feet from a landscaped area. Landscape islands in parking lots shall contain at least 100 square feet, with a minimum width of ten feet. Landscape areas next to buildings which are at least 3 feet in width and contain at least 100 square feet, may be included as landscaped areas from which to measure. The landscape edge referenced in Section 19.5.a.1 is not to be included as a landscaped area from which to measure.
 - 2. For site plans greater than 2.5 acres in size, no parking space shall be located more than 75 feet from a landscaped area. Landscape islands in parking lots shall contain at least 200 square feet, with a minimum width of ten feet. Landscape areas next to buildings which are at least 3 feet in width and contain at least 100 square feet, may be included as landscaped areas from which to measure. The landscape edge referenced in Section 19.5.a.1 is not to be included as a landscaped area from which to measure.
 - 3. At least one tree from Section 19.14 (2" caliper minimum) shall be planted for every 15 parking spaces. The number of required trees shall be rounded to the nearest whole number. These trees shall be planted inside or within 15' of the parking lot, but shall not be placed in the landscaped edge referenced in Section 19.5.a.1
 - 4. All landscaped areas shall be protected by a raised six-inch concrete curb. Pavement shall not be placed closer than 4.5 feet from the trunk of a tree.
 - 5. Where an existing parking area is altered or expanded to increase the number of spaces to a total of more than twenty, interior landscaping shall be provided on the new portion of the lot in accordance with the above standards.
 - 6. A landscape island of at least 10 feet in width and 18 feet in length shall be provided on each side of all drives which provide access from the street to the property.

19.6 - Residential Landscaping Requirements

These standards shall apply to all residential districts.

- a. Multiple Dwelling Landscaping Requirements:
 - 1. A landscaped edge shall be provided adjacent to all streets and highways. The landscaped edge shall be a minimum width of 35 feet, exclusive of street rights-of-way. Within the landscaped edge, one tree from Section 19.14 (2" caliper minimum) shall be planted per 50 lineal feet of landscaped edge. The number of required trees shall be calculated solely on the linear frontage of the required landscaped edge and shall be rounded to the nearest whole number. Trees may be grouped together or evenly spaced.
 - 2. Where parking lots and drives abut the landscaped edge, ten shrubs (3 gallon minimum)

shall be planted per 50 lineal feet of abutment to the landscaped edge. These shrubs are in addition to the required number of trees. The number of required shrubs shall be calculated solely on the linear frontage of parking lot/drive abutment to the required landscaped edge and shall be rounded to the nearest whole number. A berm or masonry wall may be placed within the landscaped edge in lieu of the required shrubs. The berm or masonry wall must be at least 30 inches above the top of the parking lot closest to the street.

- 3. No site plan approved by the Planning Commission prior to the effective date of this section shall be required to conform to the landscaping requirements of this section unless the site plan is being resubmitted to the Planning Commission and there is a thirty percent (30%) or more increase in the square footage of building area or parking lot.
- 4. At least one tree from Section 19.14 (2" caliper minimum) shall be planted per ten parking spaces. These trees shall be planted inside or within 15 feet of the parking lot, but shall not be placed in the landscaped edge referenced in Section 19.6.a.1.
- 5. At least two trees from Section 19.14 (2" caliper minimum) and five shrubs (3 gallon minimum) shall be planted per housing unit. This landscape material cannot be included in the landscaped edge along the street frontage. However, it can be included in the other open space areas required by the zoning ordinance.
- 6. All landscaped areas shall be protected by a raised six-inch concrete curb. Pavement shall not be placed closer than 4.5 feet from the trunk of a tree.
- 7. A landscape island of at least 10 feet in width and 18 feet in length shall be provided on each side of all drives which provide access from the street to the property.
- b. Single Family (R-1 through R-6), Two-Family (R-4 through R-6), and Mobile Home (RMH) Landscape Requirements
 - 1. At least one tree from Section 19.14 (2" caliper minimum) per 50 lineal feet of frontage along an arterial street shall be planted along the arterial street. The number of required trees shall be calculated solely on the linear footage and shall be rounded to the nearest whole number. The trees may be grouped together or evenly spaced. The general location of proposed trees shall be shown on the preliminary plat. A landscape plan shall be submitted with the final plat. The location and type of trees proposed shall be reviewed by the Technical Advisory Committee. The Planning Commission may waive the perimeter landscaping requirement for individual developments if they determine a suitable planting location is not available. If a "Landscape Reserve" is designated on the plat next to an arterial street, the 35' building setback line for lots adjacent to the Landscape Reserve can be from the ultimate right-of-way boundary as shown in the Comprehensive Plan.
 - 2. All required landscaping must be planted prior to the issuance of final inspection of any or all dwelling units in the subdivision. Further, if all required landscaping is not completed within 120 days of the issuance of the first building permit in the subdivision, no further building permits shall be issued. No manufactured housing units shall be allowed to be installed, until all required landscaping is completed.
 - 3. Perpetual maintenance of the required landscape material must be provided. A home owners association responsible for such maintenance is encouraged.

19.7 - Tree Preservation and Protection

The purpose of this section is to establish incentives for the preservation of existing trees within the City of Broken Arrow and to provide guidelines for the protection of trees during construction, development, or redevelopment.

- a. No clear-cutting of land is allowed without a grading permit from the Engineering Department.
- b. Tree Preservation Credits For every tree (8" caliper or larger) preserved in an area where landscaping is required by this ordinance, the developer shall be given credit for two trees as required by this ordinance. Only trees in good condition having been protected in accordance with the Tree Protection Guidelines shall be considered for credit.
- c. Landscape Plan The landscape plan that is required to be submitted shall include the approximate location, size (caliper and height), condition and common name of each tree to be preserved for which the applicant is requesting tree credits.
- d. Guidelines for Tree Protection Developers are encouraged to adhere to the following tree protection measures on all construction sites as applicable:
 - 1. Prior to grading, construction, or land development, the developer shall clearly mark all trees to be preserved.
 - 2. The developer shall erect a plastic mesh fence a minimum of four feet in height at the drip line around each tree or group of trees to prevent the placement of debris or fill within the drip line of any tree.
 - 3. During the construction stage of development, the developer shall prohibit cleaning, parking, or storage of equipment or materials under the canopy of any tree or group of trees to remain. Nor should the developer allow the disposal of any waste material such as, but not limited to, paint, oil, solvents, asphalt, concrete, mortar, etc., under the canopy of any tree or groups of trees to remain.
 - 4. No attachments or wires of any kind, other than those of a protective nature, should be attached to any tree.
 - 5. No fill or excavation may occur within the drip line of a tree to be preserved unless there is a specific approved plan. Major changes of grade (six inches or greater) will require additional measures to maintain proper oxygen and water exchange with the roots. With major grade changes, a retaining wall or tree well of rock or brick should be constructed around the tree no closer than the drip line. The retaining wall should be constructed so as to maintain the existing grades around a tree or group of trees.
 - 6. No utility, plumbing or irrigation trenches should be dug within the drip line.
 - 7. At no time should a wall, pavement, or porous pavement be placed closer than 4.5 feet or one foot for every two inches in caliper, whichever is greater, to the trunk of the tree.
 - 8. If a patio, sidewalk, drive or parking lot must be placed within the drip line of an existing tree, material such as a porous (turf) pavement that will allow the passage of water and

- oxygen will be required.
- 9. No twine shall be left on the tree such that it would girdle the trunk causing premature death.
- 10. A stop-work order may be issued by the City of Broken Arrow at any time if tree preservation requirements are not being met for trees designated to be preserved to meet the requirements of this ordinance.
- e. Replacement of Trees Replacement trees will be required when any tree that was shown on a landscape plan is removed. Acceptable types of replacement trees are shown in Section 19.14. Trees shall be replaced at the following rates:
 - 1. Any tree with a caliper of less than 3 inches shall be replaced by the same caliper and type of tree.
 - 2. Trees that are 4 to 16 inches in caliper shall be replaced with two trees with a minimum caliper of 3 inches. Larger trees may be used as long as at least 6 caliper inches is replaced.
 - 3. Trees that are 17 to 30 inches in caliper shall be replaced with three trees with a minimum caliper of three inches. Larger trees may be used as long as at least 9 caliper inches is replaced.
 - 4. Trees that are larger than 30 inches in caliper shall be replaced with four trees with a minimum caliper of three inches. Larger trees may be used as long as at least 12 caliper inches is replaced.
 - 5. If the physical limitations of the subject property are such that all of the replacement trees cannot be properly located, the applicant may locate the extra trees on public park land with the approval of the City Horticulturist.

19.8 - Tree Spacing and Clearance

Trees shall be spaced along streets as follows:

- a. Except for areas zoned C-1, O-1, O-1P, or C-1P, no tree on an arterial street shall be planted closer than seven feet from the face of the ultimate street curb or closer than four feet from a sidewalk.
- b. At the intersection of any arterial street with any other street or driveway, no abutting property owner shall allow any vegetation to exceed a height of thirty inches above street grade within the sight-triangle.
- c. Prior to any landscaping being installed on freeways and expressways, a letter from the appropriate State transportation agency (ie, Oklahoma Department of Transportation or Oklahoma Turnpike Authority) approving of such landscaping shall be provided to the City of Broken Arrow.
- d. No tree shall be planted within 15 feet of any fire hydrant so as to obstruct the fire hydrant when viewed from the street.

19.9--Trees in Public Utility Easements

No trees, other than those species listed as small trees in Section 19.14, shall be planted under or within 20 lateral feet of any overhead utility wire, or over or within five lateral feet of any underground public utility line.

19.10 - Care of Trees on Public Land

The City shall have the right to prune and remove trees, plants, and shrubs within the public right of way lines of all streets, alleys, avenues, lanes, squares, and public grounds as may be necessary to insure public safety, to preserve or enhance the symmetry and beauty of the public area, or to protect public utility facilities thereon.

19.11 - Landscaping Plan Approval

Landscape plans shall be reviewed and approved by the Planning Commission. For multifamily, commercial, and industrial developments, a landscaping plan may either be submitted with the required site plan or at later date following site plan approval. If the detailed landscape plan is to be submitted following site plan approval, the site plan shall at least show where landscape development is to occur. For single family, two-family, and mobile home developments, the location of proposed landscape development shall be shown on the preliminary plat followed by a landscape plan submitted with the final plat. Upon receipt of a landscape plan, the Planning Commission shall:

- a. Approve the landscape plan as complying with the requirements of this ordinance, or
- b. Approve the landscape plan with conditions which bring it into compliance with the requirements of this ordinance, or
- c. Reject the landscape plan as failing to comply with the requirements of this ordinance.
- d. Waive the landscape requirement if it is determined that a suitable location for landscape development is not available.

19.12 - Landscape Plan

The required landscaping plan shall contain the following:

- a. The date, scale, north arrow, project name and the name of the owner and designer.
- b. The location of property lines and dimensions of the tract.
- c. The approximate center line of existing water courses, the approximate location of significant drainage features, the location and size of existing and proposed streets and alleys, existing and proposed utility easements and overhead utility lines on or adjacent to the lot, existing and proposed fire hydrants on or adjacent to the lot, and existing and proposed sidewalks on or adjacent to the lot.
- d. The location, size, and type (tree, shrub, ground cover, berms, or grass) of proposed landscaping and the location and size of the proposed landscaped areas.

- e. Planting details and/or specifications.
- f. The location, size (caliper and height), condition, and common name of any existing tree for which credit is requested shall be indicated. The method of protecting the existing trees which are to be retained from damage during construction shall be described.
- g. The proposed irrigation system, including a drawing of the nature and location of the irrigation system.
- h. The schedule of installation of required landscaping and appurtenances, which shall specify installation of all required landscaping and appurtenances, except trees, prior to the issuance of a certificate of occupancy (for multifamily, commercial, and industrial developments) or first building permit (for single family and two family developments) and further specify installation of required trees within the landscape plan within 120 days after issuance of such occupancy permit or first building permit. No manufactured housing units shall be allowed to be installed until all required landscaping is completed.

19.13 - Certification of Installation

Prior to the issuance of a certificate of occupancy (for multifamily, commercial, and industrial developments) or issuance of final inspection (for single family and two family developments), written certification shall be submitted to the City of Broken Arrow Inspection Department by an architect, landscape architect, or engineer authorized to do business in the State of Oklahoma or the owner of the property that the installation of the landscaping and appurtenances, except trees, are in accordance with the landscape plan approved by the Planning Commission. Prior to or within 120 days following the issuance of the occu-pancy permit (for multifamily, commercial, and industrial developments) or first building permit (for single family and two family developments), written certi-fication of an architect, landscape architect, or engineer authorized for business in the State of Oklahoma or the owner of the property that all trees have been installed in accordance with the approved landscape plan shall be submitted to the City of Broken Arrow Inspection Department.

19.14 - APPROVED TREE LIST FOR LANDSCAPE REQUIREMENTS

DEFINITIONS:

Large trees-

Trees that will attain a mature height of over 60 feet and at least 35 feet wide. These trees should be spaced at least 35 feet apart.

Medium trees-

Trees that will attain a mature height of 30-60 feet and at least 25 feet wide. These trees should be spaced at least 25 feet apart.

Small trees-

Trees that will attain a mature height of less than 30 feet and at least 15 feet wide. These trees should be spaced at least 15 feet apart. Only small trees may be planted under or within 10 ft. of an overhead utility.

LARGE TREES:

Botanical name Common name

Celtis occidentalis Hackberry

Fraxinus americana +White ash*

Fraxinus pennsylvanica +Green ash*

Ginkgo biloba +Ginkgo**

Liriodendron tulipifera Tulip tree

Pinus echinata Shortleaf pine
Pinus taeda Loblolly pine

Platanus x acerifolia London planetree

Platanus occidentalis Sycamore

Quercus alba White oak

Quercus bicolor Swamp white oak

Quercus coccinea Scarlet oak
Quercus nigra Water oak
Quercus palustris Pin oak

Quercus phellos Willow oak

Quercus rubra

Northern red oak

Quercus shumardi

+Shumard oak

Taxodium disticum

+Bald cypress

Carya illinoinensis Pecan

Juglans nigra Black walnut

MEDIUM TREES:

Acer platanoides Norway maple*

Acer rubrum Red maple*

Acer saccharum Sugar maple*

Betula nigra River birch

Bumelia lanuginosa Chittamwood

Carpinus betulus European hornbeam

Celtis laevigata Sugar hackberry

Gleditisia triacanthos +Thornless honeylocust*

Gymnocladus dioicus Kentucky coffee tree**

Ilex opaca American holly

Juniperus scopulorum Rocky mountain juniper

Koelreuteria paniculata +Goldenrain tree

Magnolia virginiana Sweetbay magnolia

Morus alba White mulberry*

Ostrya virginiana Eastern hophornbeam

Pinus nigra Austrian pine

Pinus thunbergiana Japanese black pine

Pinus sylvestris Scotch pine

Pistacia chinensis +Chinese pistache
Pyrus calleryana +Callery pear*
Quercus acutissima +Sawtooth oak
Quercus muehlenbergi +Chinquapin oak
Quercus robur +English oak

Quercus stellata Post oak
Quercus virginiana Live oak

Sapindus drummondi Western soapberry
Sophor japonica Japanese pagoda tree

Tilia americana American linden
Tilia cordata +Littleleaf linden
Ulmus parvifolia +Lacebark elm
Zelkova carpinifolia Japanese zelkova

SMALL TREES:

Acer ginnala +Amur maple

Amelanchier arborea Downy serviceberry
Carpinus caroliniana American hornbeam
Cercis canadensis +Eastern redbud

Cercis reniformus +Oklahoma redbud*

Cotinus coggygria +Smoketree
Crataegus spp. Hawthorn*

Elaeagnus angustifolia +Russian olive

Magnolia soulangiana Saucer magnolia

Malus spp. +Flowering crabapple*

Philadelphus coronarius Sweet mockorange

Prunus cerasifera Purpleleaf plum*

Prunus serrulata Japanese cherry

Prunus virginiana Chokecherry

Syringa reticulata Japanese tree lilac

- ** male trees only
- + best trees recommended for parking lot applications

SECTION II. Any ordinance or parts of ordinances found to be in conflict herewith are hereby repealed.

SECTION III. An emergency exists for the preservation of the public health, peace, and safety, and therefore this ordinance shall become effective from and after the time of its passage and approval.

PASSED AND APPROVED and the emergency clause ruled upon separately this 15th day of June, 1998.

DATED this 15th day of June, 1998.

Return

^{*} only use improved grafted trees